REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Claims 1-18 and 21-33 are pending in the application.

Claims 2, 4-20 and 29-33 stand withdrawn pursuant to a restriction requirement. Claim 1 is generic to all species.

Claim 1 has only been amended to address a minor informality. No new matter or new issues have been added.

The Objection to claim 1 regarding the term "the said" on page 2 of the Office Action is obviated by the amendment to claim 1 as set forth above. Accordingly, withdrawal of the Objection to claim 1 is respectfully requested.

The rejection of claim 1 under 35 U.S.C. § 112, second paragraph, on page 2 of the Office Action, is respectfully traversed. Applicant respectfully points out that base claim 3, at line 2, recites "the buried oxide layer," which is proper antecedent basis for "all the buried oxide layer" as recited in dependent claim 27. Accordingly, withdrawal of the Section 112 rejection is respectfully requested.

The rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Griffith, is respectfully traversed. Claim 1 is not anticipated by Griffith for the following reasons.

In claim 1, the method must be conducted such that "the amorphous region contains a majority of a top silicon layer and whole buried layer." See last three lines of claim 1.

In contrast, at column 4, lines 39-44 and 64-68 of Griffith, the amorphous region in a relatively thin layer (22) (see Fig. 2 of Griffith) between the upper Si layer (14) and the buried oxide layer (13). In other words, the process of Griffith is conducted so that the amorphous reagion does not contain the whole buried layer nor a majority of the top silicon layer.

Furthermore, the method of Griffith produces a SOI material having a five-layer structure as shown in Fig. 4 of Griffith. In contrast, the method recited in present claim 1 produces a SIO material having a three-layer structure as shown in Fig. 8 of the present application.

Since Griffith does not teach conducting a method such that "the amorphous region contains a majority of a top silicon layer and whole buried layer," Griffith cannot anticipated the claimed invention. Accordingly, withdrawal of the Section 102 rejection is respectfully requested.

The rejection of claims 3 and 21-28 under 35 U.S.C. § 103 as being unpatentable over Griffith in view of Ogawa, is respectfully traversed. The claimed invention is not obvious over the combination of Griffith and Ogawa for the following reasons.

Griffith teaches a method of forming an electric field shielding layer in a SIMOX substrate, in which the annealing temperature for the dual oxygen/silicon-implanted substrate is in the range of 1150°C to 1250°C. However, Griffith teaches to conduct the method to form an oxygen-doped polycrystalline EFS layer (32) between the buried dielectric silicon dioxide layer (13) and the upper monocrystalline silicon layer (14),

while the thin interfacial silicon dioxide layer (33) is formed between the polysilicon FES layer (32) and the crystalline silicon layer (14). See column 4 of Griffith. As a result, the resulting SOI material has a five-layer structure as shown in Fig. 4 of Griffith, which has a drawback of high leakage current in back transistors near the polysilicon layer (32).

In contrast, in the present invention the method is conducted such that no polysilicon layer is formed between the upper Si layer and the amorphous buried silicon dioxide layer. As stated above, the claimed method produces "an amorphous region containing a majority of a top silicon layer and whole buried layer," such that the resulting SIO material has a three-layer structure as shown in Fig. 8 of the present application, which unexpectedly overcomes the drawbacks of the five-layer structure of Griffith.

Ogura does not provide the deficiencies of Griffith. Ogura also does not teach a method that provides the three-layer structure of the claimed invention, in which no polysilicon layer is formed between the upper Si layer and the amorphous buried silicon dioxide layer. Thus, the combination of Griffith and Ogura also cannot teach or suggest such.

Furthermore, Ogura teaches a method of fabricating an SOI substrate by forming a continuous silicon dioxide film. The first implanted ions are silicon ions and the second implanted ions are nitrogen/oxygen ions. See Figs. A, B, and C, and column 4, lines 40-45 of Ogura. In particular, Fig. A shows that Si is used as the first implanted ions and Fig. B shows that oxygen is used as the second implanted ions. Thus, Ogura

teaches away from using nitrogen ions as the first implanted ions according to present claims 3 and 21-28.

In view of the many differences between the claimed invention and the theoretical combination of Griffith and Ogura, and many unexpected advantages of the claimed invention, withdrawal of the Section 103 rejection is respectfully requested.

In view of all of the objections and rejections of record having been addressed, it is believed that the present application is in condition for allowance and Notice to that effect is respectfully requested.

Respectfully submitted,

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